

### *Abstract*

The present invention relates to fractionated block copolymers characterized by a higher average molecular weight, a narrower molecular weight distribution and decreased unsaturation compared to the unfractionated polymers. The polyoxyalkylene block copolymers exhibited higher viscosities, a liquid to gel transition at lower temperatures and a liquid to gel transition over a narrower temperature range than unfractionated polyoxyalkylene block copolymers at the same concentration. One specific aspect of the invention relates to a polyoxyalkylene block copolymer, wherein the polyoxyalkylene block copolymer transforms from a liquid to a gel over a temperature range of about 2 °C to about 5 °C. Another specific aspect relates to a polyoxyalkylene block copolymer, wherein the viscosity of an aqueous solution of the polyoxyalkylene block copolymer increases by at least a factor of two over a temperature range of about 2 °C.